

WE CLAIM:

- 1 1. A process for the carbonylation of an epoxide  
2 comprising reacting the epoxide with carbon  
3 monoxide in the presence of a catalyst system  
4 comprising two components, wherein the first  
5 component is a source of one or more metals  
6 selected from the group consisting of cobalt,  
7 ruthenium and rhodium, and the second component is  
8 a coordination complex of a tetrapyrrole compound  
9 with one or more of the metals belonging to the  
10 group consisting of groups IIIA and IIIB of the  
11 periodic system, lanthanides and actinides.
- 1 2. The process of claim 1, wherein the metal of the  
2 first component is cobalt.
- 1 3. The process of claim 2, wherein the first  
2 component is a metal tetracarbonyl.
- 1 4. The process of claim 2, wherein the metal of the  
2 second component is aluminium.
- 1 5. The process of claim 2, wherein the tetrapyrrole  
2 compound is a porphyrine compound.
- 1 6. The process of claim 2, wherein the epoxide is  
2 selected from the group consisting of ethylene  
3 oxide and propylene oxide.
- 1 7. The process of claim 2, wherein the carbonylation  
2 is conducted in the presence of a solvent having  
3 an active hydrogen atom.
- 1 8. The process of claim 1, wherein the first  
2 component is a metal tetracarbonyl.
- 1 9. The process of claim 1, wherein the metal of the  
2 second component is aluminium.
- 1 10. The process of claim 1, wherein the tetrapyrrole  
2 compound is a porphyrine compound.

- 1 11. The process of claim 1, wherein the epoxide is  
2 selected from the group consisting of ethylene  
3 oxide and propylene oxide.
- 1 12. The process of claim 1, wherein the carbonylation  
2 is conducted in the presence of a solvent having  
3 an active hydrogen atom.
- 1 13. A process for the preparation of a catalyst system ✓  
2 suitable for the carbonylation of epoxides, which  
3 process comprises the steps of:  
4 (a) reacting a source of at least one metal  
5 selected from the group consisting of  
6 groups IIIA and IIIB of the periodic  
7 system, lanthanides and actinides with a  
8 tetrapyrrole compound; and,  
9 (b) reacting the product of step (a) with a  
10 source of at least one metal selected from  
11 the group of cobalt, ruthenium and rhodium.
- 1 14. The process of claim 13, wherein the metal of step  
2 (a) is aluminium, and wherein the tetrapyrrole  
3 compound is a porphyrine compound.
- 1 15. The process of claim 14, wherein the source of  
2 metal of step (b) is a cobalt tetracarbonyl sodium  
3 salt.
- 1 16. The process of claim 13, wherein the source of  
2 metal of step (b) is a cobalt tetracarbonyl sodium  
3 salt.